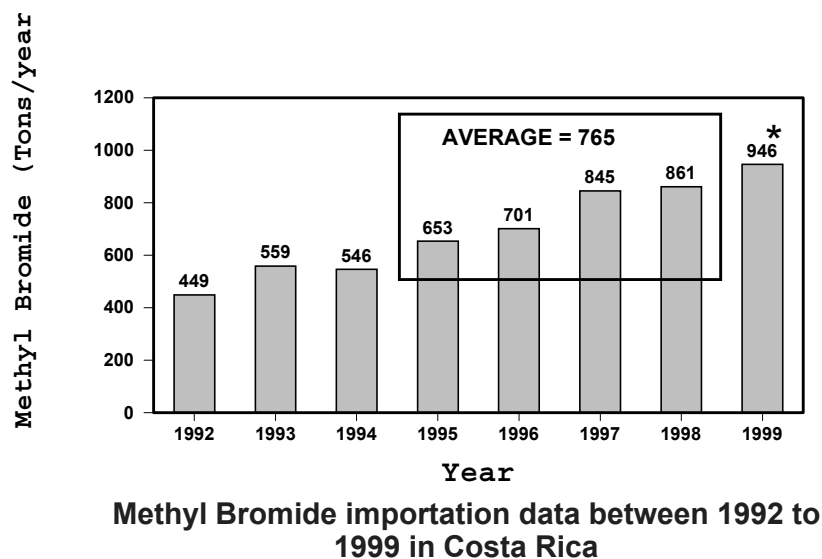


## Methyl Bromide Alternatives in Costa Rica: Demonstration Projects on Melon and Cut Flowers

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Costa Rica, it is among the countries that have become high level MB user in recent years and that have rapidly accelerated use of the fumigant. Between 1995 and 1998 the average consumption was 765 tons, and in 1999 increase to 946 tons, an increase of 23%.



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★ COGO. 2000. MINAE. Costa Rica.

The main use of MB is for soil fumigation in melon and cut flowers, other crops like bananas and vegetables seedlings consume small amounts of the fumigant. Melon and Cut Flower growers use MB to control mainly soil pests: nematodes (*Meloidogyne* sp) and fungi (*Rhizoctonia* sp, *Fusarium* sp, *Phyitium* sp, *Phytophthora* sp), and for weed control (*Cyperus* sp).

On July 21, 1998, The Legislative Assembly of Costa Rica, approved the act # 7808 recognizing the Montreal Protocol Amendment concerning to Ozone Depleting Substances, the Annexes adopted on the Second Meeting (June 29, 1990), and the Fourth Meeting of The Parties (November 25, 1992).

In 1999 Costa Rican Government start the National Program for MB phase out with two demonstration projects (melon and cut flowers). The main agriculture research centers of the public universities, melons and cut flowers growers associations and an environmental NGO initiate a collaborative working group to find and test alternatives proposed by Montreal Protocol. The projects were designed to show alternative technologies to the use of MB as a soil fumigant in melons and cut flowers. The chosen alternatives technologies are solar heating (only on melon), steam (only on cut flowers),

cover crops, organic amendments, other soil fumigant and non fumigant pesticides, all in combination with an integrated pest management strategy.

Projects operation is in three phases: a workshop for MB users awareness, field demonstration of alternatives (which includes the preparation of a technical and economic assessment of the alternatives used), and the dissemination of the results among Costa Rican MB users. At the end of the project we will have basic information for a Regional Extension Program to Caribbean and Central America countries.

At this time we have very good results:

- Coordination between university researchers, government, NGO's and MB users works very well. Transparency of the projects helps to start the work and maintain coordination in the working group.
- Projects promote those alternatives with less human health and environment risk. Some of them show potential: solar heating for melons, steam for cut flowers and organic amendments for both crops.
- Experiences interchange between researchers and growers from Colombia (cut flowers) and Mexico (melon) with the working group
- MB users associations are very open to prove and adopt alternatives.
- Some alternatives have proven to be effective in the field and some growers are testing them in small areas.

Although we have good results some challenges are ahead:

- 2002 freeze. For Costa Rica the average consumption of MB between 1995-1998 was 765 tons. In 1999 was 946-ton. That means for Costa Rica a big reduction of current use for year 2002, close to 20%, and a second big reduction to 2005 (another 20%).
- Demonstration projects ends on March 2001. We need to improve extension programs to all Costa Rican MB users and non users to promote a national awareness related to MB phase out, because we will have only nine months to 2002
- Research related to the human health and environment impact of the MB alternatives. Although working group promotes low environmental and human health impact alternatives, we need to be sure that our proposed technologies have low risk than MB to our environment and human health.
- Adoption of alternatives at a farm scale. After initial workshops, MB users indicate that adoption of an alternative need to be tested at farms specific conditions (weather, soil properties and management, etc.).
- Probably we will need a very intensive MB phase out implementation program to accomplish with Costa Rica compromises with the International Community.